



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
|-----------------|-------------|----------------------|---------------------|------------------|
|-----------------|-------------|----------------------|---------------------|------------------|

10/784,977

02/25/2004

Tsuyahiko Shimada

826.1931

8981

21171 7590 07/10/2008

STAAS & HALSEY LLP
SUITE 700
1201 NEW YORK AVENUE, N.W.
WASHINGTON, DC 20005

EXAMINER

PATEL, MANGLESH M

ART UNIT

PAPER NUMBER

2178

MAIL DATE

DELIVERY MODE

07/10/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|---|--|
| Office Action Summary | Application No. 10/784,977 | Applicant(s) SHIMADA, TSUYAHIKO | |
| | Examiner MANGLESH M. PATEL | Art Unit 2178 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1 and 3-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1 and 3-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>2/5/08 & 6/24/08</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. This **FINAL** action is responsive to the amendment filed on 2/19/2008 including the IDS filed on 2/5/08 & 6/24/08.
2. Claims 1 & 3-12 remain pending. Claims 1 & 5-12 are the independent claims.

Withdrawn Rejections

3. The 35 U.S.C. 112 second paragraph rejection of claims 1, 5-12 & 3-4 have been withdrawn in light of the amendment.

Information Disclosure Statement

4. The information disclosure statements (IDS) submitted on 6/24/08 has been entered, and considered by the examiner. The IDS submitted on 2/5/08 lists duplicate references of the one submitted on 6/24/08 and as therefore not been considered.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 1 & 3-12 remain rejected under 35 U.S.C. 103(a) as being unpatentable over Kodaira (U.S. 6,868,183, filed on Mar 17, 2000) in view of Schneider (U.S. 5,229,589, filed on Nov 21, 1991).

Regarding Independent claims 1, 5, 7, 9 and 11-12, A document processing apparatus which displays a document image using image data of a document having one or more entry columns, comprising: An image data obtaining unit obtaining image data of a document; An area discrimination unit discriminating an area of a document image indicated by the image data obtained by said image data obtaining unit, and discriminating at least between two types of areas, that is, a useful information area having useful information for document processing and a useless information area having no useful information; A data processing unit increasing a ratio of the useful information area to the entire area by processing at least one of a first partial image data which is image data of a portion for display of the useful information area and a second partial image data which is image data of a portion for display of the useless information

area based on the discrimination by said area discrimination unit; A display control unit displaying a document image on a display device using the image data obtained by said data processing unit processing at least one of the first and second partial image data; Wherein said area discrimination unit considers at least one direction in counting a number of pixels assumed to be used in displaying information about a document image represented by the image data, and discriminates the useful information area from the useless information area based on a counting result comparison to a predetermined number.

Kodaira teaches an image processing apparatus that includes a scanner to read a document thus allowing conversion into image data. Kodaira then shows that the data is discriminated by a region discriminating unit. The unit determines the density difference of the binary image data thereby allowing the determination of key regions. Kodaira goes on to further state "The image type determining unit, of which is described below, determines feature quantities such as presence or absence of key regions such as dot and photographs..." (see column 5, lines 20-35). Therefore useful and useless area's are discriminated thus allowing determination of the key regions. (see abstract, column 4, lines 50-67 & column 5, lines 1-60 & column 6, lines 10-55). Furthermore Kodaira suggests that the discriminating unit considers a direction in counting the number of pixels by disclosing a sub-scanning direction which counts and analyzes the max pixel density based on a threshold (see column 20, lines 40-67 & column 21, lines 1-15). Clearly such scanning is of pixel data. Kodaira fails to explicitly teach the increase in ratio which is magnification of the key region, instead he determines the region by sub-scanning process and pixel density analysis. However Schneider teaches that areas of interest are expanded in an area of interest pixel map (see abstract). Thus Schneider discloses that "The preprinted data within the areas of interest pixel map is subsequently expanded during image differencing to provide greater accuracy in scanning the completed questionnaire pages and detecting answer marks" (see column 2, lines 43-47). Thus Schneider suggests magnification of useless to useful information. Furthermore Schneider also suggests direction information in counting pixel data to adjust and align the locations of the area of interest against a predetermined value such as the original pixel map data (see column 4, lines 25-67). At the time of the invention it would have been obvious for the skilled artisan to modify Kodaira's teachings to include an expandable pixel map. The motivation for doing so would have been to improve the accuracy of Kodaira's discrimination unit, thereby improving the detection of key regions.

Regarding Dependent claim 3, with dependency of claim 1, wherein when said area discrimination unit discriminates the useful information area from the useless information area based on whether or not the number of pixels counted by

considering one direction is equal to or smaller than a predetermined value, said data processing unit increases a ratio of the useful information area to the entire area by performing on at least the second partial image data a process of thinning lines having the number of pixels equal to or smaller than a predetermined value in the lines in the one direction.

Kodaira teaches an image processing apparatus that includes a scanner to read a document thus allowing conversion into image data. Kodaira then shows that the data is discriminated by a region discriminating unit. The unit determines the density difference of the binary image data thereby allowing the determination of key regions. Kodaira goes on to further state "The image type determining unit, of which is described below, determines feature quantities such as presence or absence of key regions such as dot and photographs..." (see column 5, lines 20-35). Therefore useful and useless area's are discriminated thus allowing determination of the key regions. (see abstract, column 4, lines 50-67 & column 5, lines 1-60 & column 6, lines 10-55). Furthermore Kodaira suggests that the discriminating unit considers a direction in counting the number of pixels by disclosing a sub-scanning direction which counts and analyzes the max pixel density based on a threshold (see column 20, lines 40-67 & column 21, lines 1-15). Clearly such scanning is of pixel data. Kodaira fails to explicitly teach the increase in ratio which is magnification of the key region, instead he determines the region by sub-scanning process and pixel density analysis. However Schneider teaches that areas of interest are expanded in an area of interest pixel map (see abstract). Thus Schneider discloses that "The preprinted data within the areas of interest pixel map is subsequently expanded during image differencing to provide greater accuracy in scanning the completed questionnaire pages and detecting answer marks" (see column 2, lines 43-47). Thus Schneider suggests magnification of useless to useful information. Furthermore Schneider also suggests direction information in counting pixel data to adjust (thinning) and align the locations of the area of interest against a predetermined value such as the original pixel map data (see column 4, lines 25-67). At the time of the invention it would have been obvious for the skilled artisan to modify Kodaira's teachings to include an expandable pixel map. The motivation for doing so would have been to improve the accuracy of Kodaira's discrimination unit, thereby improving the detection of key regions.

Regarding Dependent claim 4, with dependency of claim 1, wherein said data processing unit performs a process on at least one of the first and second partial image data so that a ratio of the useful information area to the entire area is increased by using different display magnifications of the useful information area and the useless information area.

Kodaira teaches an image processing apparatus that includes a scanner to read a document thus allowing conversion into image data. Kodaira then shows that the data is discriminated by a region discriminating unit. The unit determines the density difference of the binary image data thereby allowing the determination of key regions. Kodaira goes on to further state "The image type determining unit, of which is described below, determines feature quantities such as presence or absence of key regions such as dot and photographs..." (see column 5, lines 20-35). Therefore useful and useless area's are discriminated thus allowing determination of the key regions. (see abstract, column 4, lines 50-67 & column 5, lines 1-60 & column 6, lines 10-55). Furthermore Kodaira suggests that the discriminating unit considers a direction in counting the number of pixels by disclosing a sub-scanning direction which counts and analyzes the max pixel density based on a threshold (see column 20, lines 40-67 & column 21, lines 1-15). Clearly such scanning is of pixel data. Kodaira fails to explicitly teach the increase in ratio which is magnification of the key region, instead he determines the region by sub-scanning process and pixel density analysis. However Schneider teaches that areas of interest are expanded in an area of interest pixel map (see abstract). Thus Schneider discloses that "The preprinted data within the areas of interest pixel map is subsequently expanded during image differencing to provide greater accuracy in scanning the completed questionnaire pages and detecting answer marks" (see column 2, lines 43-47). Thus Schneider suggests magnification of useless to useful information. Furthermore Schneider also suggests direction information in counting pixel data to adjust and align the locations of the area of interest against a predetermined value such as the original pixel map data (see column 4, lines 25-67). At the time of the invention it would have been obvious for the skilled artisan to modify Kodaira's teachings to include an expandable pixel map. The motivation for doing so would have been to improve the accuracy of Kodaira's discrimination unit, thereby improving the detection of key regions.

Regarding Independent claims 6, 8 and 10, A document processing apparatus which processes a document having one or more entry columns, comprising: an image data obtaining unit obtaining image data of a document; an area discrimination unit discriminating an area of a document image indicated by the image data obtained by said image data obtaining unit, and discriminating at least between two types of areas, that is, a useful information area having useful information for document processing and an useless information area having no useful information area; a Document recognition unit recognizing an entry column entered on the document image indicated by the image data, and updating a position of the entry column depending on a result of the processing by said data processing unit; Correction unit correcting presence/absence of an entry in the entry column recognized by said document recognition means at an instruction of a user ; data processing unit increasing a ratio of the useful information area to the entire area

by processing at least one of a first partial image data which is image data of a portion for display of the useful information area and a second partial image data which is image data of a portion for display of the useless information area based on the discrimination by said area discrimination unit; Display control unit displaying a document image on a display device using the image data obtained by said data processing means processing at least one of the first and second partial image data; Wherein said area discrimination unit considers at least one direction in counting a number of pixels assumed to be used in displaying information about a document image represented by the image data, and discriminates the useful information area from the useless information area based on a counting result comparison to a predetermined number.

Kodaira teaches an image processing apparatus that includes a scanner to read a document thus allowing conversion into image data. Kodaira then shows that the data is discriminated by a region discriminating unit. The unit determines the density difference of the binary image data thereby allowing the determination of key regions. Kodaira goes on to further state “The image type determining unit, of which is described below, determines feature quantities such as presence or absence of key regions such as dot and photographs...” (see column 5, lines 20-35). Therefore useful and useless area’s are discriminated thus allowing determination of the key regions. (see abstract, column 4, lines 50-67 & column 5, lines 1-60 & column 6, lines 10-55). Furthermore Kodaira suggests that the discriminating unit considers a direction in counting the number of pixels by disclosing a sub-scanning direction which counts and analyzes the max pixel density based on a threshold (see column 20, lines 40-67 & column 21, lines 1-15). Clearly such scanning is of pixel data. Kodaira fails to explicitly teach the increase in ratio which is magnification of the key region, instead he determines the region by sub-scanning process and pixel density analysis. However Schneider teaches that areas of interest are expanded in an area of interest pixel map (see abstract). Thus Schneider discloses that “The preprinted data within the areas of interest pixel map is subsequently expanded during image differencing to provide greater accuracy in scanning the completed questionnaire pages and detecting answer marks” (see column 2, lines 43-47). Thus Schneider suggests magnification of useless to useful information. **Furthermore the claimed document recognition unit recognizes a mark in a column based on the scanning process by expanding the area already disclosed by Schneider (see column 2, lines 43-47).** At the time of the invention it would have been obvious for the skilled artisan to modify Kodaira’s teachings to include an expandable pixel map. The motivation for doing so would have been to improve the accuracy of Kodaira’s discrimination unit, thereby improving the detection of key regions.

It is noted that any citation [[s]] to specific, pages, columns, lines, or figures in the prior art references and any interpretation of the references should not be considered to be limiting in any way. A reference is relevant for all it contains and may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art. [[See, MPEP 2123]]

Response to Arguments

7. Applicant's arguments filed 2/19/2008 have been fully considered but are not persuasive.

Applicant Argues: However, as described in column 6, line 56 through column 7, line 6 and fig 5, the areas of interest of Schneider are not expanded by "increasing the ratio of the useful information area to the entire area". Rather, the areas of interest are increased in Schneider by taking the coordinates of a line surrounding an area of interest and thickening the line by increasing those coordinates. (pg 10, paragraph 6 – pg 11 paragraph 1-2)

The Examiner Respectfully disagrees: Schneider discloses that "The preprinted data within the areas of interest pixel map is subsequently expanded during image differencing to provide greater accuracy in scanning the completed questionnaire pages and detecting answer marks" (see column 2, lines 43-47). Thus Schneider suggests magnification of the answer mark.

Applicant Argues: Nothing has been cited in Kodaira and Schneider, alone or in combination that teaches or suggests "recognizing the entry column" as recited above. (pg 11, paragraph 2)

The Examiner Respectfully disagrees: Schneider already teaches scanning marked regions for processing in a questionnaire for the purpose of "recognizing the entry column" (column 2, lines 18-22).

It is **not necessary that the references actually suggest, expressly or in so many words the changes or improvements that applicant has made**. The test for combining references is what the references as a whole would have suggested to one of ordinary skill in the art. In re Sheckler, 168 USPQ 716 (CCPA 1971); In re McLaughlin 170 USPQ 209 (CCPA 1971); In re Young 159 USPQ 725 (CCPA 1968).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Manglesh M. Patel whose telephone number is (571) 272-5937. The examiner can normally be reached on M, W 6 am-3 pm T, TH 6 am-2pm, Fr 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Stephen S. Hong can be reached on (571) 272-4124. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Manglesh M. Patel
Patent Examiner (AU 2178)
July 2, 2008

/Manglesh M Patel/
Manglesh Patel
Examiner, Art Unit 2178

| | |
|--|-----------------|
| | /CESAR B PAULA/ |
|--|-----------------|

Application/Control Number: 10/784,977
Art Unit: 2178

Page 9

| | |
|--|---------------------------------|
| | Primary Examiner, Art Unit 2178 |
|--|---------------------------------|